perpendicular ones are $\frac{MC}{NG}$ CG and $\frac{AD}{EF}$ CF. And if the force of the refracting Plane begins to act upon the Rays either in that Plane or at a certain distance from it on the one side, and ends at a certain distance from it on the other side, and in all places between those two Limits acts upon the Rays in Lines perpendicular to that rafracting Plane, and the Actions upon the Rays at equal distances from the refracting Plane be equal, and at unequal ones either equal or unequal according to any rate whatever; that motion of the Ray which is Parallel to the refracting Plane will suffer no alteration by that force; and that motion which is perpendicular to it will be altered according to the rule of the foregoing Proposition. If therefore for the perpendicular Velocity of the emerging Ray CN you write $\frac{MC}{NG}$ CG as above, then the perpendicular Velocity of any other emerging Ray CE which was $\frac{AD}{EF}$ CF, will be equal to the square Root of $CDq + \frac{MCq}{NGq}$ CGq. And by squaring these equals, and adding to them the Equals ADq and $MCq - CDq$, and dividing the Summs by the Equals $CFq + EFq$ and $CGq + NGq$, you will have $\frac{ADq}{EFq}$ equal to $\frac{MCq}{NGq}$. Whence AD, the Sine of Incidence, is to EF the Sine of Refraction, as MC to NG, that is, in a given *ratio*. And this Demonstration being general, without determining what Light is, or by what kind of force it is refracted, or assuming any thing further than that the refracting Body acts upon the Rays in Lines perpendicular to its Surface; I take it to be a very convincing Argument of the full Truth of this Proposition.

So

So then, if the *ratio* of the Sines of Incidence and Refraction of any sort of Rays be found in any one Case, 'tis given in all Cases; and this may be readily found by the Method in the following Proposition.

PROP. VII. Theor. VI.

The Perfection of Telescopes is impeded by the different Refrangibility of the Rays of Light.

THE imperfection of Telescopes is vulgarly attributed to the spherical Figures of the Glasses, and therefore Mathematicians have propounded to Figure them by the Conical Sections. To shew that they are mistaken, I have inserted this Proposition; the truth of which will appear by the measures of the Refractions of the several sorts of Rays; and these measures I thus determine.

In the third experiment of the first Book, where the refracting Angle of the Prism was $62\frac{1}{2}$ degrees, the half of that Angle 31 deg. 15 min. is the Angle of Incidence of the Rays at their going out of the Glass into the Air; and the Sine of this Angle is 5188, the Radius being 10000. When the Axis of this Prism was parallel to the Horizon, and the Refraction of the Rays at their Incidence on this Prism equal to that at their Emergence out of it, I observed with a Quadrant the Angle which the mean refrangible Rays (that is, those which went to the middle of the Sun's coloured Image) made with the Horizon and by this Angle and the Sun's altitude observed at the same time, I found the Angle which the emergent Rays contained with the incident to be 44 deg. and 40 min. and the half of this Angle added to the Angle of Incidence 31 deg. 15 min. makes the